AMENDMENTS TO THE CLAIMS:

Please amend claims 1, 7, 9, 11, 12, 13 and 17; cancel claims 8 and 15; and add new claims 18-21 as follows. This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method of verifying a projected image within a three-dimensional view plane of an augmented-reality display system as a preselected movable real object disposed in three-dimensional free space, whereby the object may be employed as an interface tool for the system, comprising steps of:

identifying a representative characteristic of the movable real object within the three-dimensional view plane wherein the representative characteristic comprises shape and location of the object and is exclusive of preselected marked standards and printed identifiers;

determining dimensional aspects of the movable real object from the projected image;

computing a corresponding dimensional identity and location of the movable real object at an object point relative to the view plane by calculating the three-dimensional position in real space of the movable real object at the object point; and,

verifying whether the dimensional identity and location are reasonably consistent with predetermined standards for the object.

2. (Previously Presented) The method as claimed in claim 1 wherein the preselected movable real object comprises a reference panel such as a screen, tablet or piece of paper and the identifying includes recognizing a corner of the panel.

3. (Original) The method as claimed in claim 2 wherein the determining comprises calculating distances between corners and a center point of the reference panel.

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4. (Original) The method as claimed in claim 3 wherein the computing comprises converting the calculated distances to the dimensional identity and location based on an assumption that the reference panel is structurally flat.

5. (Previously Presented) The method as defined in claim 1 wherein the verifying includes testing from at least one of the tests of (a) whether the movable real object has expected dimensions or proportions, (b) whether the corners are right angles, (c) whether a center point matches when calculated from distinct sets of the corners, (d) whether the corners are generally within a common plane, and (e) whether the movable real object lies within an expected viewing range.

6. (Previously Presented) The method as defined in claim 1 wherein the preselected movable real object is comprised of three equidistant line points disposed in free space and the determining comprises detection of projected dimensions of the three equidistant line points.

7. (Currently amended) A method of verifying a projected image within a three-dimensional view plane of an augmented-reality display system as a preselected movable real object disposed in three-dimensional free space, the object having representative characteristics including three equidistant line points, whereby the object may be employed as an interface tool for the system, comprising steps of:
identifying the three equidistant line points of the movable real object within the three-dimensional view plane wherein the three equidistant line points comprise shape and location of the object and are exclusive of preselected marked standards and printed identifiers;
determining the projected dimensions of the three equidistant line points;
computing a corresponding dimensional identity and location of the movable real object at an object point relative to the view plane by calculating X, Y and Z coordinates in real space of the movable real object at the object point based on the projected dimensions of the three equidistant line points in the view plane and known augmented-reality display system geometric dimensions; and,
verifying whether the dimensional identity and location are reasonably consistent with predetermined standards for the object.

8. (Cancelled)

9. (Currently Amended)   The method as defined in claim ~~8~~ 11 wherein the calculating includes identifying a diagonal between the corners comprised of three equidistant line points.

10. (Original) The method as defined in claim 9 wherein the identifying includes identifying a center point of the diagonal.

11. (Currently amended)   <u>A method for identifying a movable real piece of paper disposed in free space in a variable three-dimensional viewing area of an augmented-reality display system comprising steps of:</u>
<u>identifying an object at a viewing plane in the three-dimensional viewing area having a characteristic representative of the piece of paper wherein the characteristic is exclusive of preselected registration marks and printed identifiers;</u>
<u>locating a plurality of corners of the object;</u>
<u>calculating a dimensional representation of the object in the viewing plane from the locations of the corners;</u>
<u>unprojecting the dimensional representation to calculate the</u> X, Y and Z coordinates in real space of the object based on dimensions of the movable real object in the viewing plane and display system geometrics<u>; and,</u>
<u>comparing the object coordinates with predetermined standards indicative of the piece of paper for verifying the object as the piece of paper</u>.

12. (Currently Amended) The method as defined in claim ~~8~~ <u>11</u> wherein the comparing includes testing from at least one of the tests of (a) whether the object has expected dimensions or proportions, (b) whether the corners are right angles, (c) whether a center point matches when calculated from distinct sets of the corners, (d) whether the corners are generally within a common plane, and (e) whether the object lies within an expected viewing range.

13. (Currently Amended) An augmented-reality display system for verifying a presence of a predetermined and movable real reference frame in a three-dimensional free space within a system image, comprising:

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a movable real item disposed in free space disposed within a three-dimensional view plane of the system;

a sensing device for identifying from the view plane a characteristic of the movable real item associated with the predetermined reference frame wherein the characteristic is exclusive of preselected registration marks and printed identifiers; and,

a controller for determining dimensions of the real item within the view plane, for computing a corresponding dimensional identity and three-dimensional location of the real item relative to the view plane <u>by calculating the three-dimensional position in real space of the movable real item</u>, and for verifying whether the dimensional identity and location correspond with the presence of the predetermined reference frame.

14. (Original) The system as defined in claim 13 wherein the real item comprises a piece of paper.

15. (Cancelled)

16. (Previously presented) The system as defined in claim 14 wherein the controller includes means for testing from at least one of the tests of (a) whether the object has expected dimensions or proportions, (b) whether the corners are right angles, (c) whether a center point matches when calculated from distinct sets of the corners, (d) whether the corners are generally within a common plane, and (e) whether the object lies within an expected viewing range.

17. (Currently amended) The method as defined in claim 8 11 wherein the unprojecting comprises unprojecting a plurality of dimensional representations of the object attributable to three-dimensional movement of the object in the variable viewing area.

18. (New)   The method as claimed in claim 7 wherein the preselected movable real object comprises a reference panel such as a screen, tablet or piece of paper and the identifying includes recognizing a corner of the panel.

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19. (New)   The method as claimed in claim 18 wherein the determining comprises calculating distances between corners and a center point of the reference panel.

20. (New)   The method as claimed in claim 19 wherein the computing comprises converting the calculated distances to the dimensional identity and location based on an assumption that the reference panel is structurally flat.

21. (New)   The method as defined in claim 7 wherein the verifying includes testing from at least one of the tests of (a) whether the movable real object has expected dimensions or proportions, (b) whether the corners are right angles, (c) whether a center point matches when calculated from distinct sets of the corners, (d) whether the corners are generally within a common plane, and (e) whether the movable real object lies within an expected viewing range.